

AFRICAN MYXOMYCETES.

By A. V. DUTHIE.

In this preliminary paper an attempt has been made to compile a list of the species of Myxomycetes previously recorded from Africa in various journals and monographs, and also to record forms which have been accessible to or collected by myself.

The collections of the Mycological Herbarium, Pretoria, have been placed at my disposal, and for this privilege I must express my indebtedness to Mr. Pole Evans; I have also to thank Dr. Schönland for furnishing me with a list of the forms represented in the collection of the Rev. C. Kalchbrenner, for which MacOwan and Wood were partly or entirely responsible.

Apparently the South African Myxomycetes are still very imperfectly known, and their investigation is attended with much difficulty. The specimens are usually of small size, easily confused with fungus growths, and not readily recognised by the layman. Consequently one is dependent for material chiefly on the opportunity of examining museum collections or on the results of one's own excursions. Unfortunately there are no collections at any of our museums, and the only collections accessible are those at the Pretoria Herbarium and MacOwan's collection now in Dr. Schönland's possession.

While the distinguishing characters of certain species are well marked and alter little with locality and habitat, those of others are more variable. This variation in many of the forms makes specific determination practically impossible in view of the absence of large collections for the purpose of comparison, and the dearth of accessible literature.

The specimens collected by myself have been obtained chiefly from the Knysna and Stellenbosch districts. Forms sent to me from other districts are noted accordingly in the list of species.

There are, as noted in Lister's and Massey's Monographs, representatives of 10 South African genera and 14 species in the British Museum and Kew Herbarium. About 22 species have been recorded from time to time from the Cape Province and Natal (see *Journ. Bot. May*, 1916, p. 125). I have found in the limited areas traversed, all the above genera, with the exception of *Trichamphora*, *Craterium*, and *Mucilago*, and many of

the same species, in addition to 9 genera which do not appear to have been recorded from South Africa by other collectors.

More than a third of the known genera of Myxomycetes are now recorded from South Africa, and it is certain that further search will result in the discovery of many additional forms.

I have to thank many interested friends and students for assisting me in amassing material for examination, and here I would take the opportunity of asking for specimens from any persons interested in this lowly group of our South African flora. Although one must of necessity be more or less satisfied with specimens of the mature fructifications yet it would be of much assistance if the colours of plasmodia and young fruit bodies were noted by collectors.

As soon as opportunities offer I intend publishing descriptions of the undetermined species in the following list and future collections.

SUB-CLASS I.—**EXOSPOREAE.**

ORDER I.—CERATIOMYXACEAE.

GENUS 1.—CERATIOMYXA.

SUB-CLASS II.—**ENDOSPOREAE.**

COHORT I.—AMAUROSPORALES.

SUB-COHORT I.—CALCARINEAE.

ORDER I.—PHYSARACEAE.

GENUS 2.—BADHAMIA.

GENUS 3.—PHYSARUM.

GENUS 4.—FULIGO.

GENUS 5.—TRICHAMPHORA.

GENUS 6.—PHYSARELLA.

GENUS 7.—CRATERIUM.

GENUS 8.—LEOCARPUS.

GENUS 9.—DIDERMA.

GENUS 10.—DIACHAEA.

ORDER II.—DIDYMIACEAE.

GENUS 11.—DIDYMIUM.

GENUS 12.—MUCILAGO.

SUB-COHORT II.—AMAUROCHAETINEAE.

ORDER I.—STEMONITACEAE.

- GENUS 13.—STEMONITIS.
GENUS 14.—COMATRICHA.
GENUS 15.—LAMPRODERMA.

COHORT II.—LAMPROSPORALES.

SUB-COHORT I.—ANEMINEAE.

ORDER I.—HETERODERMACEAE.

- GENUS 16.—CRIBRARIA.
GENUS 17.—DICTYDIUM.

ORDER III.—TUBULINACEAE.

- GENUS 18.—TUBIFERA.

ORDER IV.—RETICULARIACEAE.

- GENUS 19.—DICTYDIAETHALIUM.
GENUS 20.—RETICULARIA.

ORDER V.—LYCOGALACEAE.

- GENUS 21.—LYCOGALA.

SUB-COHORT II.—CALONEMINEAE.

ORDER I.—TRICHIACEAE.

- GENUS 22.—TRICHIA.
GENUS 23.—OLIGONEMA.
GENUS 24.—HEMITRICHIA.

ORDER II.—ARCYRIACEAE.

- GENUS 25.—ARCYRIA.
GENUS 26.—PERICHAENA.

B.M. = British Museum.

K. = Kew.

P. = Mycological Herbarium, Pretoria.

Kl. = Kalchbrenner's Collection.

F. = Farquharson's Collection.

A.D. = Author's Collection.

Genus No.

1—*Ceratiomyxa fruticulosa* (*Macbr.*).

West Africa (F.).

South Africa (Journ. Bot. May, 1916).

East Africa (Journ. Bot. May, 1916).

Knysna (A.D.); Stellenbosch (A.D.).

Habitat: On decayed wood; common.**C. fruticulosa**, var. *flexuosa* (*Lister*).

West Africa (F.).

East Africa (Journ. Bot. May, 1916).

Habitat: On moist logs.2—*Badhamia*, sp.

Stellenbosch (A.D.).

Habitat: On dead bark.

Apparently the first record of this genus from South Africa.

3—*Physarum melleum* (*Mass.*).

Cape (K.).

South Africa (Kl.)?

Knysna (A.D.).

South Africa (Journ. Bot. May, 1916).

Habitat: On dead wood.**P. mutabile** (*Lister*).

Cameroons, West Africa (B.M.).

Habitat: On dead leaves, etc.**P. roseum** (*Berk. & Br.*).

West Africa (F.).

Habitat: On species of *Thelephora*.**P. viride** (*Pers.*).

South Africa (Kl.).

South Africa (Mass. Mon. p. 329).

Habitat: On dead wood, bark, etc.**P. viride**, var. *aurantium* (*Lister*).

West Africa (F.).

Habitat: On dead wood.**P. viride**, var. *rigidum* (*Lister*).

West Africa (F.).

Habitat: On dead wood.**P. nucleatum** (*Rex*).

West Africa (F.).

Habitat: On dead wood, stalks of palm leaves, etc.**P. pusillum** (*Lister*).

West Africa (F.).

South Africa (Journ. Bot. May, 1916).

East Africa (Journ. Bot. May, 1916).

Habitat: On sheaths of oil palm, etc.

P. didermoides (*Rost.*).

Cameroons (Herb. Dr. Jahn). (Also see Journ. Bot. May, 1916.)

Algeria? (Mass. Mon. p. 304).

South Africa (Journ. Bot. May, 1916).

Habitat: On dead wood, etc.

P. nutans (*Pers.*).

North Africa (Mass. Mon. p. 327).

Vereeniging (P.).

South Africa (Kl.).

Habitat: On dead leaves, wood, etc.

P. nutans, sub-sp. **leucophaeum** (*Lister*).

South Africa (Kl.).

South Africa (Mass. Mon. p. 288).

Cape (Engler-Prantl. p. 34).

P. crateriforme (*Petch*).

West Africa (F.).

Habitat: On stalks of pigeon-pea.

P. compressum (*Alb. & Schw.*).

West Africa (F.).

Habitat: On decaying inflorescences of palms and on old cocoa pods.

P. reniforme (*Lister*).

West Africa (F.).

Habitat: On cut ends of oil palms.

P. cinereum (*Pers.*).

West Africa (F.).

Pretoria (P.).

Bloemhof (P.).

Numerous localities in Transvaal (P.).

Knysna (A.D.).

Stellenbosch (A.D.).

Cape of Good Hope? (Mass. Mon. p. 309).

South Africa (Kl.)?

South Africa (Mass. Mon. p. 298).

Algiers (Mass. Mon. p. 298).

Habitat: On turf; abundant in summer after rain (A.D.).

P. gyrosum (*Rost.*).

West Africa (F.).

Habitat: On stems of ground-nut, grass, etc.

P. sinuosum (*Weinm.*).

North Africa (Journ. Bot. May, 1916).

P. bogoriense (*Racib.*).

West Africa (Journ. Bot. May, 1916).

East Africa (Journ. Bot. May, 1916).

Cameroons (B.M.).

Habitat: On dead leaves.

P. digitatum (*Lister & Farquharson*).

West Africa (F.).

Habitat: On dead wood.

P. citrinum (*Schum.*)?

South Africa (Kl.).

P. leucopus (*Link.*).

South Africa (Kl.).

South Africa? (*Mass. Mon.* p. 287).

P. compactum (*Lister*).

West Africa (*Herb. Mass.*). (See *Lister's Mon.* p. 53.)

Habitat: On moss.

P. sp.

Knysna (A.D.).

Habitat: On dead wood.

P. sp.

Maritzburg (P.).

Habitat: On dead *Salix*.

P. sp.

Pretoria (P.).

Habitat: On dead leaves and twigs

P. sp.

Clanwilliam (A.D.).

Habitat: On dead leaves and twigs.

P. sp.

Stellenbosch (A.D.).

Habitat: On poplar bark.

P. sp.

Stellenbosch (A.D.).

Habitat: On dead pine needles.

Schröter (*Engler-Prantl.* p. 34) mentions that six species of *Physarum* occur in Africa and names the following:

P. cinereum (Batsch), Cape.

P. leucophaeum (Fries) = [*P. nutans*, sub-sp. *leucophaeum*],
Cape.

4—**Fuligo septica** (*Gmelin*).

West Africa (F.).

North Africa (*Journ. Bot.* May, 1916).

Knysna (A.D.).

Stellenbosch (A.D.).

Kirstenbosch (A.D.).

Newlands (P.).

Pretoria (P.).

Clanwilliam (A.D.).

South Africa (K.).

Habitat: On decayed wood, grass, etc. Common.

F. cinerea (*Morg.*).

West Africa (F.).

Habitat: On heaps of old cocoa-pods.

5—**Trichamphora pezizoidea** (*Jungh.*).

Togo, East Africa (B.M.).

West Africa (F.).

Natal (K.).

Somerset East (Kl.).

Habitat: On dead leaves, wood, etc.

6—**Physarella oblonga** (*Morg.*).

West Africa (*Journ. Bot. May, 1916*).

7—**Craterium minutum** (*Fries.*).

West Africa (*Journ. Bot. May, 1916*).

Natal (*Mass. Mon. p. 263*).

Habitat: On leaves, twigs, etc.

C. aureum (*Rost.*).

West Africa ? (*Journ. Bot. May, 1916*).

Algeria (*Mass. Mon. p. 269*).

Habitat: On leaves, bark, etc.

8—**Leocarpus fragilis** (*Rost.*):

Stellenbosch (A.D.).

Habitat: On dead pine needles.

Apparently the first record of the genus from Africa.

9—**Diderma subdictyospermum** (*Lister*).

Cape (K.).

Habitat: On moss and dead leaves.

D. effusum (*Morg.*).

West Africa (F.).

Habitat: On dead leaves, etc.

D. globosum (*Pers.*).

North Africa (*Journ. Bot. May, 1916*).

D. radiatum (*Lister*).

North Africa (*Journ. Bot. May, 1916*).

D. testaceum (*Pers.*).

Algeria.

Habitat: On fallen branches of *Opuntia*.

Identity of this species doubtful. (*See Lister's Mon. p. 107.*)

D. sp.

Stellenbosch (A.D.).

Habitat: On fern pinnules and small twigs.

D. sp.

Clanwilliam (A.D.).

Habitat: On dead bark.

10—*Diachaea leucopoda* (Rost.).

West Africa (Journ. Bot. May, 1916).

North Africa (Journ. Bot. May, 1916).

Central Africa (B.M.).

Nigeria (B.M.).

Natal (K.).

Natal Kl.).

Swaziland (P.).

Pretoria (P.).

Stellenbosch (P.); (A.D.).

Habitat: On living and dead leaves, sticks, etc.

***D. radiata* (Lister & Petch).**

West Africa (F.).

Habitat: On dead leaves and sticks.

11—*Didymium melanospermum* (Macbr).

Mt. Ruwenzori (B.M.).

Cape of Good Hope (Mass. Mon. p. 233).

Natal (Kl.).

Nigeria (B.M.).

Habitat: On dead wood, etc.

***D. melanospermum*, var. *minus* (Lister).**

West Africa (Journ. Bot. May, 1916).

East Africa (Journ. Bot. May, 1916).

North Africa (Journ. Bot. May, 1916).

***D. difforme* (Duby).**

North Africa (Journ. Bot. May, 1916).

Stellenbosch (A.D.).

Habitat: On dead leaves and twigs and living herbaceous stems.

***D. nigripes* (Fries).**

South Africa (Kl.).

Pretoria (P.).

Habitat: On dead leaves, sawdust, etc.

***D. nigripes* var. *xanthopus* (Lister).**

North Africa (Journ. Bot. May, 1916).

***D. squamulosum* (Fr.).**

North Africa (Journ. Bot. May, 1916).

D. sp.

Knysna (A.D.).

Habitat: On dead wood.

D. sp.

Stellenbosch (A.D.).

Habitat: On dead leaves.

Schröter (Engler-Prantl. p. 30) mentions that two species of this genus occur in South Africa, but does not name them.

12—*Mucilago spongiosa* (Morgan).

North Africa (Journ. Bot. May, 1916).

South Africa (Mass. Mon. p. 256).

Habitat: On wood, leaves, etc.

13—*Stemonitis splendens* (Rost.).

West Africa (F.).

Angola (B.M.).

Uganda (B.M.).

East Africa (Journ. Bot. May, 1916).

Natal (K.).

Pretoria (P.).

Table Mountain (Mass. Mon. p. 78).

Cape of Good Hope (Mass. Mon. p. 74).

Stellenbosch (A.D.).

Habitat: On dead wood.

***S. splendens*, var. *Webberi* (Lister).**

West Africa (F.).

South Africa (Journ. Bot. May, 1916).

***S. fusca* (Roth.).**

West Africa (F.).

South Africa (Kl.).

East Africa (Journ. Bot. May).

Natal? (Mass. Mon. p. 72).

North Africa (Journ. Bot. May, 1916).

Habitat: On decayed wood, etc.

***S. herbatica* (Peck).**

West Africa (F.).

South Africa (Journ. Bot. May, 1916).

Salisbury, Rhodesia (P.).

Habitat: On tobacco seedlings, etc.

***S. herbatica*, var. *confluens* (Lister).**

West Africa (F.).

Habitat: On sticks, etc.

S. sp.

Knysna (A.D.).

Stellenbosch (A.D.).

Habitat: On dead wood.

S. sp.

Knysna (A.D.).

Habitat: On dead wood and leaves.

S. sp.

Stellenbosch (A.D.).

Habitat: On wall near wooden beams.**S. sp.**

Pretoria (P.).

Habitat: On log.**14—Comatricha nigra (Schroet.).**

North Africa (Journ. Bot. May, 1916).

C. pulchella (Rost.), var. gracilis (Lister).

Cameroons, West Africa (B.M.).

Habitat: On dead wood, etc.**C. typhoides (Rost.).**

West Africa (F.).

Algiers (Engler-Prantl. p. 28).

Habitat: On dead wood.**C. longa (Peck).**

West Africa (F.).

South-West Africa (B.M.).

South Africa (Journ. Bot. May, 1916).

Habitat: On dead wood, etc.**C. sp.**

Knysna (A.D.).

Kirstenbosch (A.D.).

Habitat: On decayed wood.**C. sp.**

Stellenbosch (A.D.)

Habitat: On dead wood.**15—Lamproderma scintillans (Morgan).**

Stellenbosch (A.D.).

Habitat: On moss and root of epiphytic orchids in greenhouse.**L. arcyronema (Rost.).**

West Africa (F.).

Habitat: On dead wood.

Apparently the first record of the genus from South Africa.

16—Cribraria violacea (Rex).

Cameroons, West Africa (B.M.).

Habitat: On dead leaves.**C. languescens (Rex).**

West Africa (F.).

C. intricata (Schröd.), var. dictydioides (Lister).

West Africa (F.).

Habitat: On dead wood.

- C. argillacea** (*Pers.*).
Stellenbosch (A.D.).
Habitat: On dead coniferous wood.
- C. sp.**
Knysna (A.D.).
Habitat: On charred eucalyptus wood.
- C. sp.**
Knysna (A.D.).
Habitat: On dead wood.
Apparently the first record of this genus from South Africa.
- 17—**Dictydium cancellatum** (*Macbr.*).
Knysna (A.D.).
Stellenbosch (A.D.).
Habitat: On dead wood, fibre, moss, etc.
- D. cancellatum**, var. **fuscum** (*Lister*).
West Africa (F.).
Habitat: On dead wood.
This is the first record of this genus from South Africa.
- 18—**Tubifera ferruginosa** (*Gmelin*).
West Africa (F.).
Habitat: Inside hollow palm stem.
- T. sp.**
Knysna (A.D.).
Habitat: On decayed eucalyptus stumps.
Apparently the first record of this genus from South Africa.
- 19—**Dictydiaethalium plumbeum** (*Rost.*).
West Africa (F.).
North Africa (Engler-Prantl. p. 18).
Algeria (Mass. Mon. p. 51).
Victoria Falls (A.D.).
Cape Province (A.D.).
Stellenbosch (A.D.).
Habitat: On dead wood and twigs.
First record of genus from South Africa.
- 20—**Reticularia Lycoperdon** (*Bull.*).
West Africa (F.).
North Africa (Journ. Bot. May, 1916).
Knysna (A.D.).
Stellenbosch (A.D.).
Kirstenbosch (A.D.).
Newlands (P.).
Habitat: On dead coniferous wood. Common.

This form is represented in the Mycological Herbarium, Pretoria, under the name *Amaurochaete fuliginosa* (Macbr.).

21—*Lycogola epidendrum* (Fries).

West Africa (F.).

Algeria (Mass. Mon. p. 121).

South Africa (Mass. Mon. p. 121).

Cameroons (B.M.).

Cape (B.M.).

South Africa (Kl.).

Knysna (A.D.).

Stellenbosch (A.D.).

Habitat: On dead wood. Common.

L. epidendrum, var. *tessellatum* (Lister).

West Africa (Journ. Bot. May, 1916)

22—*Trichia favoginea* (Pers.).

North Africa? (Journ. Bot. May, 1916).

T. varia (Pers.).

North Africa (Journ. Bot. May, 1916).

T. persimilis (Kerst.).

Cape (K.).

Habitat: On dead wood, leaves, etc.

T. Botrytis (Pers.).

South Africa (Mass. Mon. p. 175).

Habitat: On wood, twigs, etc.

T. scabra (Rost.).

South Africa (Kl.).

T. sp.

Knysna (A.D.).

Habitat: On dead wood, leaves, etc.

23—*Oligonema nitens* (Rost.).

Algiers (K.).

Habitat: On dead wood.

24—*Hemitrichia clavata* (Rost.).

West Africa (B.M.).

North Africa (Journ. Bot. May, 1916).

Natal (K.).

Knysna (A.D.).

Clanwilliam (A.D.).

South Africa (Kl.).

Transvaal (P.).

Habitat: On dead wood.

H. Serpula (Rost.).

West Africa (F.).

East Africa (Journ. Bot. May, 1916).
 North Africa (Journ. Bot. May, 1916).
 Victoria Falls (A.D.).
 Natal (A.D.) ; (P).
 Knysna (A.D.).

Habitat : On dead wood, bark, etc.

H. Vesparium (*Macbr.*).

West Africa (F.).
 East Africa (Journ. Bot. May, 1916).
 North Africa (Journ. Bot. May, 1916).

Habitat : In moist, hollow palm stumps.

25—**Arcyria ferruginea** (*Sauter*).

East Africa (B.M.).

Habitat : On dead wood.

A. cinerea (*Pers.*).

West Africa (F.).
 Cape (K.).
 South Africa (Kl.) ?

Habitat : On dead wood.

A. denudata (*Sheldon*).

Cameroons, West Africa (B.M.).
 Cape (K.).
 Knysna (A.D.).
 Pretoria (P.).
 Natal (Kl.).
 North Africa (Journ. Bot. May, 1916).

Habitat : On dead wood.

A. insignis (*K. & C.*).

Cameroons, West Africa (B.M.).
 South Africa (Kl.).
 Natal (K.).
 Cape (K.).
 Knysna (A.D.).

Habitat : On dead wood.

A. pomiformis (*Rost.*).

South Africa (Kl.).

A. incarnata (*Pers.*).

South-West Africa (B.M.).
 South Africa (Journ. Bot. May, 1916).

Habitat : On dead wood.

A. nutans (*Grev.*).

West Africa (F.).
 Knysna (A.D.).

Stellenbosch (A.D.).

Habitat: On dead wood.

A. Oerstedtii (*Rost.*).

West Africa (F.).

Habitat: On dead wood.

A. sp.

Kirstenbosch (A.D.).

Habitat: On dead wood.

A. sp.

Knysna.

Habitat: On dead wood.

A. sp.

Kirstenbosch.

Habitat: On decaying fungus.

26—**Perichaena depressa** (*Lib.*).

West Africa (F.).

Portuguese East Africa [B.M.].

Habitat: On dead wood and bark.

P. vermicularis (*Rost.*).

West Africa (F.).

Habitat: On dead bark, etc.

P. corticalis (*Rost.*).

Clanwilliam (A.D.).

Habitat: On dead wood.

First record of this genus from South Africa.

APPENDIX.

Schröter [Engler-Prantl. pp. 31, 33] mentions the occurrence of one species of *Chondrioderma* (*Rost.*) in North Africa, and two species of *Tilmadoche* (*Fries*) in South Africa. In the absence of specific determinations it is impossible to identify these forms.